

# [NON-COHERENT FREQUENCY SHIFT KEYING TRANSMITTER USING A DIGITAL INTERPOLATION SYNTHESIZER]

## Abstract

A non-coherent frequency shift keying transmitter for up-converting a baseband signal to a radio frequency signal is provided. The non-coherent frequency shift keying transmitter applies the interpolation method in a digital frequency synthesizer to replace the conventional Phase Locked Loop (PLL) circuit. The micro processing unit receives a baseband signal firstly, then the baseband signal is converted to a RF signal via a digital synthesizer, a numerical controlled oscillator, a cascaded integrator-comb filter, and a digital-analog converter. The RF signal is then transmitted via a local oscillator, a band-pass filter, a power amplifier, and a transmitting end. This circuit eliminates unnecessary analog devices so that fabrication migration issue is avoided. Further, the modulated RF signal is more stable than that of the conventional modulator, and has a more efficient spectrum control and a better performance on the receiver end. A non-coherent FSK transmitting system is also provided in the present invention.